

What is claimed is:

1. A plasma generation system, comprising:
a microwave generator for generating microwaves;
a refractor for altering a direction of propagation of the microwaves;
and
an electromagnetic unit for applying a magnetic field to plasma
formed by the microwaves to generate electron cyclotron resonance (ECR).
2. The system as claimed in claim 1, wherein the refractor is a
dielectric lens.
3. The system as claimed in claim 2, wherein the dielectric lens is
formed of alumina.
4. The system as claimed in claim 1, wherein the microwave
generator comprises:
a radio frequency power source for generating the microwaves;
a waveguide, which is connected to the radio frequency power source,
for guiding the propagation of the microwaves; and
a polarizer, which is placed at an outlet of the waveguide, for
polarizing the microwaves in a single direction.

5. The system as claimed in claim 1, further comprising:
a vacuum chamber connected to a lower portion of the refractor, the vacuum chamber including a substrate etched by plasma and a substrate holder on which the substrate is seated.

6. A plasma generation system, comprising:
a microwave generator for generating microwaves;
an antenna for forming an electric field component of the microwaves in a single direction uniformly;
a refractor for transmitting the microwaves as plane waves having a wavefront parallel to a substrate by refracting the microwaves; and
an electromagnetic unit for applying a magnetic field to plasma formed by the microwaves and for generating electron cyclotron resonance (ECR).

7. The system as claimed in claim 6, wherein the refractor is a dielectric lens.

8. The system as claimed in claim 7, wherein the dielectric lens is formed of alumina.

9. The system as claimed in claim 6, wherein the antenna is a corrugated horn antenna having a width that gradually increases in a

direction of propagation of the microwaves and having inner walls that are corrugated.

10. The system as claimed in claim 6, wherein the microwave generator comprises:

a radio frequency power source for generating the microwaves;

a waveguide, which is connected to the radio frequency power source, for guiding the propagation of the microwaves; and

a polarizer, which is placed at an outlet of the waveguide, for polarizing the microwaves in a single direction.

11. The system as claimed in claim 6, further comprising:

a vacuum chamber connected to a lower portion of the refractor, the vacuum chamber including a substrate etched by plasma and a substrate holder on which the substrate is seated.